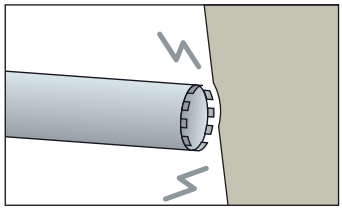
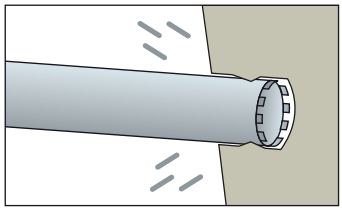
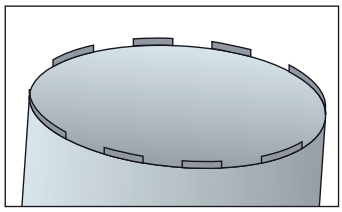
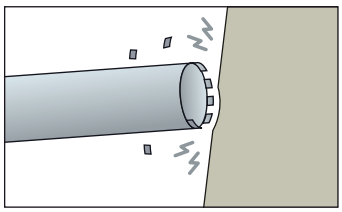
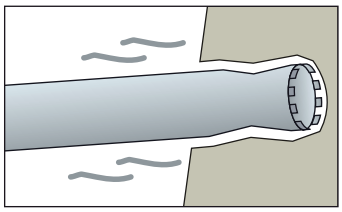
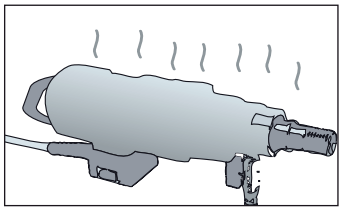
Troubleshooting

Diamond Core Drilling

The design simplicity of core drilling tools means that, apart from normal wear patterns, there is little to go wrong, provided the correct bit is chosen for the material to be cut.

Please note the following most common faults and their most obvious causes. If these first measures do not correct the fault, please stop drilling and call the Diaquip Technical Services Dept. for advice.

PROBLEMS ENCOUNTERED	POSSIBLE CAUSES	CORRECTIVE MEASURES
A. THE CORE DRILL FAILS TO CUT 	1. Machine is unstable or insecurely fixed.	1. Ensure machine is firmly anchored and stable.
	2. Motor is of insufficient power.	2. Ensure motor of correct power is fitted.
	3. The Core Drill is not of the right diamond specification for the material to be cut.	3. Fit Core Drill of correct diamond specification.
	4. Diamond segments have become ‘glazed’.	4. Run the drill briefly on abrasive material to open-up the diamond surface.
	5. Excessive coolant, causing the drill to slide or aquaplane.	5. Adjust coolant flow and ensure even distribution.
	6. Insufficient downward weight or pressure on the drill.	6. Increase downward pressure and apply this evenly.
	7. Excessive drilling speed.	7. Reduce drilling speed
	8. Excessive play in the spindle or carriage guides.	8. Ensure a snug fit between spindle and drill. Tighten carriage guides.
B. THE CORE DRILL JAMS IN THE HOLE 	1. The material to be cut is too hard for the Core Drill or has hard patches which exceed the diamond specification.	1. Replace Core Drill with one suitable for the toughest material likely to be encountered.
	2. Rubble or debris has filled the drilling hole (NB this may include a segment which has broken off).	2. Ensure adequate irrigation of the drill hole and flush out completely before recommencing drilling
	3. The Core Drill does not have sufficient side clearance for the segments to operate effectively.	3. Check side clearance (this should be adequate, but not excessive). If necessary, replace Core Drill.
C. EXCESSIVE SEGMENT WEAR 	1. Rotational speed too low.	1. Increase speed.
	2. Material to be cut is too abrasive for the diamond specification or has unexpected abrasive patches.	2. Replace Core Drill with one suitable for the abrasive material likely to be encountered.
	3. Motor power is too high.	3. Fit a motor of the correct specification.
	4. Instability of the machine or excessive play in the spindle or carriage guides.	4. Ensure machine is firmly anchored and stable. Ensure a snug fit between spindle and drill. Tighten carriage guides.
	5. Cooling system is not working adequately.	5. Overhaul cooling system and adjust flow to correct levels.

PROBLEMS ENCOUNTERED	POSSIBLE CAUSES	CORRECTIVE MEASURES
D. SEGMENTS BREAK OFF 	1. Excessive heat due to insufficient cooling.	1. Ensure that the water flow provides the correct level of cooling for the operating speed. Repair or replace segments.
	2. Segments have become damaged by unremoved debris.	2. Flush the drill hole clear of debris and increase water flow to ensure that problem does not recur. Remember that broken segments may form part of the debris and ensure that these are accounted for and removed, as otherwise these may cause substantial damage. Repair or replace segments.
	3. Segments have insufficient lateral operating space.	3. Check side clearance (this should be adequate, but not excessive). If necessary, replace Core Drill.
	4. Excessive speed at start-up.	4. Reduce and graduate start-up speed.
	5. Core Drill has been dropped or damaged in transit.	5. Inspect closely before use and after any transportation. Damage may be in the form of hairline cracks and segments which have been torn off, so close inspection is necessary. Repair or replace segments.
E. EXCESSIVE TUBE WEAR 	1. Machine is unstable or operating at the wrong angle.	1. Ensure machine is firmly anchored and stable.
	2. Too much play in the spindle or carriage guides.	2. Ensure a snug fit between spindle and Core Drill. Check rollers and bearings. Tighten carriage guides.
	3. The Core Drill has become damaged and is operating out of true.	3. Repair any warped or damaged parts. Ensure that Core Drill is running true before continuing.
	4. The Core Drill is not properly fitted.	4. Check that the Core Drill is correctly aligned and centred on the spindle.
	5. Debris is obstructing the tool.	5. Flush the debris from within the drill hole and ensure correct water flow is maintained subsequently.
F. MACHINE AND MOTOR PROBLEMS 	1. Motor is underpowered.	1. Replace with a motor of the correct power.
	2. Machine is unstable or positioned at an angle.	2. Ensure machine is firmly anchored and stable.
	3. Cooling system problems.	3. Overhaul the cooling system, ensuring correct and even flow for the work being undertaken.
	4. Drill Motor is not properly fitted to the machine, causing excessive vibration.	4. Check all the moving parts on the machine, especially spindle, bearings, rollers and carriage guides. Ensure that parts are centred and operating freely but without excessive play.
	5. Carriage guides and spindle fitting are too loose.	5. As 4) above.